

ABSTRACT OF THE DISCLOSURE

A fuel cell, a method for operating a fuel cell and a fuel cell system, which ensure no dew condensation for a wet reaction gas in the inlet area of gas channels in plates in a fuel cell stack, are provided. Gas channels 2 and heat medium channels are disposed on one surface and the other surface of one plate 1, respectively. Gas channels are disposed on the other plate such that they face the gas channels 2 in the plate 1. A gas inlet header 3 is disposed at the upper part of the gas channel 2 in the plate 1 and a heat medium inlet header is disposed at the upper part of the heat medium channels such that they face the gas inlet header on the other side. Cooling water such as heat medium is supplied from the heat medium supply manifold hole 7 to the heat medium inlet header, thereby warming up the same. The water vapor in the reaction gas (wet fuel gas) is prevented from being condensed in the inlet area of the gas channels 2 by heating up the gas inlet header by the heat conduction.